Abstract of the Disclosure

A method for manufacturing a semiconductor device (18) including a conductive path (32a) extending from the upper surface of an insulating layer (23) on a semiconductor substrate (22) to a conductive member (24) embedded in the insulating layer (23). An etching mask (26), which defines an etched hole (27) for the conductor path, is formed on the insulating layer (23) within a specified permissible error, that portion of the insulating layer (23) which is not covered by the etching mask (26) is removed by a reactive ion etching unit (10) having a reaction chamber (11) into which a reactive gas of CHF_3/CO is introduced at a CHF_3/CO flow ratio of about 15/85. After this, the etched hole (27) formed by an etching process is filled with a conductive material (32) for the conductive path (32a).